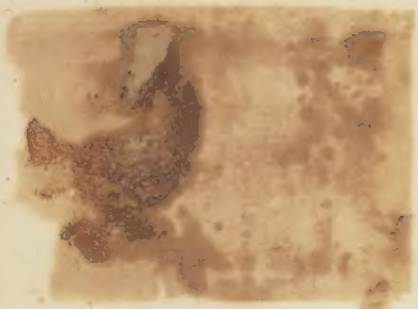
No 16

Fever



On Intermittent Fevers.

By Chamberlain

Read April 1. 1817

Prefatory Remarks

From the multiplicity of subjects presenting themselves to my view, I have found no small difficulty in selecting one, for the present essay, possessing more claims to notice than another; for be the subject what it may, ~~little original matter~~ can a student bring forth, unless its basis be experiment.

Fever, that grand outlet to human life, has from the earliest dawn of medical science, engaged the attention of man, yet let me ask in what does it consist? This question which has so long been reiterated from every part of the world, has never yet been satisfactorily answered. Cullen defines fever to consist "in an increased frequency of the pulse, with an increase of temperature, preceded by a shivering; and accompanied by an interruption and disorder of several functions, particularly some diminution of strength in the animal functions." This is by no means a satisfactory definition of fever, there may be a great increase

x The Candidate acknowledges this Sentiment to be incorrect –

of the pulse, as immediately after running, jumping and the like, without fever; it is not always preceded by a shivering; the temperature is not invariably increased, nor is the strength uniformly diminished. Imperfect as is this definition of fever, it is the best we have, and a bad theory is preferable to no theory at all. Of fevers there are several kinds as Intermittent, Remittent &c. The first of them being a very common disease in the section of country in which I reside, I have thought it a proper subject for the present purpose. It is not a disease in itself attended with much danger, but it too often leads to those that are. Dropsy, a disease often fatal, is frequently brought on by neglected cases of intermittent fever. Scirrhus jaundice &c. are produced by the same cause. These diseases with many others that might be mentioned, consequent to intermittent fever, fully point out the necessity of promptly attending to this too much neglected disease.

Dissertation

A succession of paroxysms between which there is an entire intermission from all febrile symptoms constitute intermittent fever, but as the length of time intervening between the paroxysms differs, various names have been applied to it, thus, when it occurs once in twenty four hours, it is denominated a quotidian, once in the space of forty eight hours, a tertian, and again, when seventy two hours intervene it is called a quartan. Many other forms have been mentioned by different writers, as the quintan, the sextan &c. these might have occurred, but I think it more probable that they were irregularities of one or other of those above mentioned. There are also double tertians and quartans: in a double tertian there is commonly an attack daily, this is distinguished from a quotidian by the attacks being alternately milder ~~on one day and severer~~ on the next. It is evident that there are here two forms, the lighter

attacks corresponding to the lighter, and the more severe adopting the same order. In double quartans there may be two paroxysms on the first day, none on the second and third, and two again on the fourth, or one on the first and second days, none on the third and one again on the fourth and fifth, this is a rare form, but it some times appears. Treple tertians and quartans have been noticed by many writers, they are however of very rare occurence.
The tertian I believe to be much the most frequent form of the disease, and it is more easily cured than either of the others; the quotidian is next in point of frequency: The quartan I have never seen but as arising out of protracted cases of one or other of the forms above mentioned.
Each paroxysm is divided into three stages the cold, the hot, and the sweating; these are so well described by Dr. Cullen that I shall take the liberty of quoting his words." The person is affected, first, with a langour and sense of debility, a sluggishness in motion, and some uneasiness in exerting it with

frequent [illegible] and shuddering. At the same time the face and extremities become pale; the [illegible], the flesh of his external parts [illegible], and the skin over the whole body appears contracted, as if [illegible] and [illegible] in it. At the coming on of these symptoms, some coldness of the extremities, though [illegible] may be perceived by another person. At length the patient [illegible] a sensation of cold commonly first in his back, but from thence spreading over the whole body, and now his skin feels warm to another person. The patients sense of cold increasing, produces a tremor in all his limbs with frequent successions or rigors of the [illegible] in the body. When this sense of cold and its effects, have continued for some time, they become less violent and [illegible] with warm skin. As By degrees the cold goes off entirely, and a heat greater than natural succeeds [illegible] and continues over the whole body. At this heat, the colour of the skin becomes and a [illegible] or [illegible] on

especially in the face. When the heat and redness come on the skin is relaxed and smoother, but at some time continues dry. The features of the face, and other parts of the body, recover their natural size, and become even more turgid. When the heat, redness and turgescence have increased and continued, for some time a moisture appears upon the forehead and by degrees becomes a sweat, which gradually extends downwards over the whole body. As this sweat continues to flow, the heat of the body abates, the sweat, after continuing for some time, gradually ceases, the body returns to its ordinary temperature, and most of the functions are restored to their ordinary state."

"At the commencement of a paroxysm of tertian ague, the patient begins to feel languor, the pulse is slower and weaker than natural, as the cold stage advances, it is small, frequent, and irregular; upon the accession of the hot stage the pulse is full and hard, and as

the sweating stage comes on, it becomes soft and less frequent, until it regains the natural standard. During the cold stage, the respiration is small and difficult, this by a sale under in consequence of the sympathetic existing between the stomach and lungs, there is also at this time a sensation of cold which is produced by the contraction of the papillæ of the tongue and fauces.

We have cases recorded in which the cold stage has been wanting, and also the hot, and even when the hot stage has preceded the cold, it is very uncommon.

Intermittents sometimes [illegible] [illegible] as the age [illegible] another by Dr. Chapman, [illegible] [illegible] in which all the [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]

This disease is almost entirely confined to warm marshy countries, and is caused by the effluvia arising from stagnant water, mixed with vegetable matter putrified. This has universally been allowed to be the most common cause of intermittents. I believe it to be the only cause, that is without marsh miasma or the effluvia arising from putrid vegetable matter, Intermittent fevers cannot be produced, cold, moisture, fatigue, long, sitting, night air &c I acknowledge to be auxiliary in the production but they are only auxiliary, and without that main spring, miasma cannot produce the disease. Cases have been cited, by men of a different opinion, in which persons living in the most healthy parts of cities have been attacked by them; allowing this to be a fact, it does not at all militate against my position, [illegible] can be wafted to a considerable distance and that it may be dormant in the system for a considerable length of time; the various attacks, so related, show, may it

have lived at no great distance from some putrid vegetable matter, or might have, [illegible] have been at some time not [illegible] miasmas near a place of this kind. I do not think that a town is a proper place from which to draw conclusions as to the cause of intermittent fever; we all know that a quantity of [illegible] exists in every town; this is adequate to the production, for it has producing yellow fever, and if yellow fever can be produced by it, why not intermittent, which requires for its production a much milder poison. Let the supporters of that doctrine produce, if they can, a case of this disease in a high healthy country, far remote from any marsh, stagnant water, or collection of putrefied matter. Such a case [illegible] cannot be found in the annals of [illegible] in some person who has contracted the poison in another place; cold, moisture, night air &c might [illegible] as an exciting cause and call into action [illegible]

into action.

Having given the causes, symptoms, and forms of intermittent fever, I come now to its management. This is very naturally divided into two parts viz., the treatment proper during the paroxysm, and that during the apyrexia or intermission. First of that proper during the paroxysm.

We generally follow the practice that nature indicates, and therefore when called to a patient in the first stage of the disease we order him to be put in a warm bed and warm applications to be made to his feet and different parts of his body; warm drinks should also be given and if he be much enfeebled wine may be administered with advantage. Opium has been very highly recommended in the cold stage; for I find in the case of thirty drops of the tincture given, this I think is a very valuable remedy, but in some cases much more is required to be given. The disagreeable affections of the head and great thirst that often attend when the hot stage comes on

The first thing to be done is to remove irritation, for this purpose we prescribe an emetic, but sometimes its use is superseded by the spontaneous vomiting that occurs; in that case we have only to encourage it with warm drinks: having removed the source of irritation our next object is to produce a diaphoresis; to effect this various medicines have been recommended. In Europe the James powder is preferred, in this country, the antimonial preparations the Eupatorium Perfoliatum or the Spiræa Ulmaria are generally used. I think the last article is best adapted to this stage, it is very grateful to the stomach and can be retained on the stomach when every thing else will be rejected; it is also more certain in its operation than either of the others. This practice is adequate in a majority of cases, but should it [illegible] in inflammatory action attend we should have recourse to bloodletting. The foregoing treatment has been merely palliative. I come now to that by which we put a final stop to

the paroxysms: this forms the second part of the management of intermittents, viz, that respecting the intermission. The first remedy of which I shall treat is blood letting: Various opinions have been entertained as to the propriety of bleeding in intermittent, nor, some have thought it injurious under any circumstances, and others on the contrary employed it on all occasions, I believe, as is generally the case, that the truth lies between them. Called to a patient with a full pulse, flushed countenance, great heat thirst &c I should undoubtedly bleed him, he might, and, probably, would recover without it, but to me the language of a man, whose talents were equalled by nothing but his virtues" I would not attack an enemy with infantry alone when you had, cavalry artillery &c exactly so is the case with blood letting in the disease of which we are treating, other remedies will often cure it, and indeed, it will often spontaneously subside, but this is

not a sufficient reason for laying aside those remedies by which a cure can speedily be obtained. Bloodletting however will not of itself effect a cure, but it will moderate the violence of the paroxysms very much, the cold stage will be shorter, the hot not so intensing, and the sweat not so copious, and consequently not so debilitating, besides those advantages it paves the way for other remedies, which would before have been injurious. As much pleased as I am with the success of bloodletting in intermittent fever in particular cases, yet there are many in which it is wholly inadmissible; should the system be much debilitated, and the pulse weak, no one would for a moment think of attracting blood nor would I upon every slight attack of intermittent fever, have recourse to venesection; very many cases, may very readily be cured without it, and where that is the case I would by no means bleed. The next class of remedies of which I have treat

are Emetics. And as in Bloodletting there has been a difference of opinion, some preferring cathartics, these are in many cases adequate to the cure but there are some in which they are not. Emetics at first view would appear to be contraindicated in this disease, because often at the commencement of a paroxysm, the patient is affected with a painful and continued vomiting, and it would appear that all offensive matter contained in the stomach, would be evacuated by the powers of nature alone, this by experience we find not to be the case, the fever continuing with great violence; we must therefore have recourse to emetics. The liver is often much affected, containing a quantity of vitiated bile, which of itself is competent to keep up the disease; for the removal of this nothing is so proper as an emetic, one of which will generally answer, but cases sometimes occur in which more may be required. So efficacious are emetics here, that the disease is

often checked by a single one but if this desirable end be not obtained, they will, like bloodletting, prepare the system for the reception of remedies, which previously, would not only have been useless, but evidently disadvantageous. The Tartar Emetic should be preferred except in the cases of very delicate women and children, where Ipecacuanha should be used.

Cathartics are also very useful medicines in this disease. Emetics are sometimes, from some cause or other, inadmissible, here cathartics are indispensible. They are also required where emetics are used, as it is necessary that the alimentary canal should be evacuated, previous to the use of Tonic medicines. The cathartic most commonly used, is Calomel either alone or in combination with rhubarb or jalap

The above remedies alone will often effect a cure, but in a majority of cases, a tonic plan of treatment is required to effect that purpose. The tonic now in general use in this disease is the Peruvian Bark. This invaluable medicine was discovered in the province of Peru in South America, about 1.4d.

seventeen hundred and thirty eight, by accident; an Indian was said to have been cured of an intermittent fever, by drinking water from a pond into which a portion of the bark had fallen. It was soon after administered to the countess of Cinchona, lady to the Spanish viceroy, with such decided success that its fame soon spread both in America and Europe; from this lady it derived the name of Cinchona; and that of jesuits bark from the circumstances of one of that order having first introduced it into Europe: it very soon spread nearly over that continent, and is believed at the present day, wherever known, almost exclusively used in the cure of this disease. There is a great difference of opinion among the writers on this subject as to the proper time of giving the bark, some directing it during the paroxysm, others during the intermission; some commencing the use of it immediately the patient is attacked; others waiting until several paroxysms have intervened. In the intermittents occurring in the United States, the intermission is undoubtedly the

proper time, or giving the medicine. It should be given in substance, in doses of a drachm every hour until within a short time of an expected attack, when it should be discontinued, for if given at that time or during the paroxysm it invariably aggravates every symptom. To the question, whether or not the bark should be given immediately upon an attack of intermittent fever? I would answer, it should be given as soon as the proper evacuations have been premised and not before. It is the practice in the West Indies of giving an ounce ~~[illegible]~~ dose, every morning and no more during the day; could this be retained it would perhaps be a good practice, but I believe few stomachs will be found that can bear as much. The stomach is often in such an irritable state, that the bark in substance cannot be borne in the smallest doses, here we should substitute the infusion or decoction, and if this too should be rejected we must resort to injections; this method however will not be submitted to, or a sufficient length of time to effect any great advantage in adults, it is

therefore only applicable to the cases of children; and here the rectum often gets in so irritable a state as almost to prevent the introduction of the tube; a small quantity of Laudanum in each injection will obviate in a great degree this defect. It has also been recommended to apply it externally; either by sprinkling it over the sheets, by bathing in a strong decoction, or by quilting a quantity of it in a flannel jacket to be worn by the patient next the skin; this last mode I believe is preferable; it is however applicable only to very delicate constitutions, and to children, and happily these are the only cases in which it is ever necessary to employ it in this form. The bark sometimes produces costiveness, here a little opium should be combined with it, but if on the other hand it should have a contrary effect, a small quantity of Laudanum may be used in conjunction with it.

A number of medicines have been proposed as substitutes for the Peruvian Bark in the cure of intermittent fever. I shall

mention a few of the most efficacious: I commence with those of our own country, of which one of the best is the Serpentaria Virginiana; this has been very highly recommended when given alone it sometimes produces the emetical effect, but it is a much more valuable remedy when combined with the bark. The Eupatorium Perfoliatum has been highly spoken of by Dr. Hosack who used it exclusively in this disease and with great success. Dr. Barton was much pleased with the powers of the Prunus Virginiana; many other practitioners have used it, and with evident advantage. The Liriodendron Tulipifera or common poplar was a favourite remedy of Dr. Rush's, he preferred it to all others, the bark only excepted; Dr. Barton also used it with success, and I have lately been informed by a very respectable practitioner of Virginia that he uses it with nearly the same success as the bark, he used the bark of the root in rather larger doses than the cinchona and in the same form. Many more of our native medicines have been used but I shall only mention one

other, the Cornus Florida or common dogwood this I think should hold the first rank among the indigenous articles of our country, in the cure of intermittent fever, the bark of the root is the part employed; it is given in rather larger doses than the Peruvian Bark. In the lower parts of Virginia where this disease is perhaps as frequent as in any part of the United States this medicine is never employed by the poorer classes of society and with very great success

Gum Kino may be used with advantage in cases of intermittent fever accompanied with bowel affections.

The angustura was introduced as a remedy for intermittent fever a considerable time past, it was at first thought superior to the Bark, it however soon lost its credit; but within a short time past has again come into notice; It is more grateful to the stomach, and therefore may sometimes be employed where the bark is inadmissible.

Carbon has recently been recommended in this disease.

It was first used by Dr. Kalkam a Sicilian physician he communicated his success to Dr. Colbert then in Sicily who also used it with much advantage. Many practioners have since used it, and I believe have generally found it beneficial. The Blue vitriol has been very highly recommended in the disease of which we are treating it [illegible] long standing. The Sulphates of Iron and Zinc have also been used; they are proper in the same cases as the medicine last mentioned. Many other articles from the mineral kingdom might be enumerated, but I shall only mention one other, Arsenic: of this medicine in the cure of intermittent fever, not a little has been said. From the facility with which it may be administered, it is peculiarly adapted to the cases of children; it may also be [illegible] with much benefit in the intermittents of adults continued with the hard. Sometimes all these remedies fail and the disease continues for a great length of time Blood letting has here been used with the most evident advantage; often by abstracting ten or

twelve ounces of blood and applying a blister cases have been cured that had baffled our utmost endeavours. But sometimes the disease is kept up by congestions of the viscera, we must here resort to mercury.

The Bark should be continued for some time after the paroxysms have been stopped, and the patient should be careful not to expose himself to cold or damp air. he should keep his feet dry and warm and if much debilitated should wear flannel, as the system after an attack of intermittent fever, is peculiarly liable to a repetition of the disease.

Having given the general treatment proper during the intermission, I shall now mention that to be pursued at the time of an expected paroxysm, for warding it off. The patient should be put in a warm bed and some warm drinks given. Laudanum is here a very valuable remedy, forty or fifty drops should be taken in a quantity of tea or coffee, as warm as it can be borne. this will often keep off an attack. violent exercise immediately

preceding the expected paroxysm has sometimes stopped it. Terror or a violent fit of passion has produced the same effect. change of situation is something very beneficial. Having given a short account of the cause, nature, and treatment of ~~intermittent~~ fever, I shall now proceed to make a few remarks on its prevention. This is a subject well worthy the serious attention of medical men, since there are some parts of our country, in which a large proportion of the inhabitants have annually this disease. Persons living in miasmatic countries, should avoid, night air, long fasting, fatigueing exercise or any thing predisposing the system to the action of the miasma, particularly getting wet, and remaining in damp clothes for any length of time. Rows of trees should be planted between the houses of the inhabitants and the source of exhalation. Much benefit may be derived from taking a dose of Bark every morning, during the summer and fall: this I have frequently seen attended with success. The clothes should be changed agreeably to the

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varieties of temperature; it is very essential that this should be attended to, as the changes of weather are often so great, that half ~~half~~ the persons in a family are attacked with an ague in a short time of ~~each~~ other; This may frequently be prevented by the precaution I have mentioned, and I believe were it more generally adopted, cases of intermittent fever would be rare, compared to what they are at present.